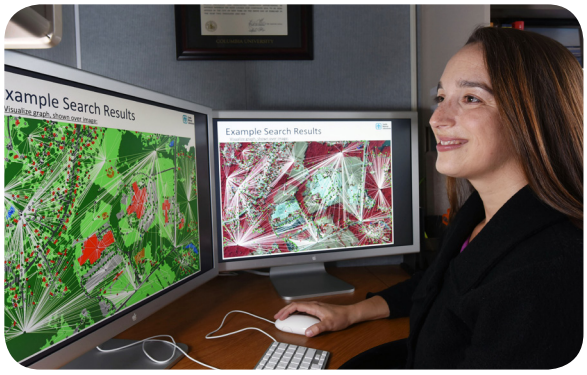
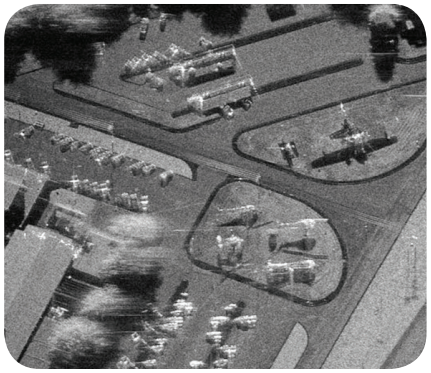
*Exceptional service in the national interest*

Sandia National Laboratories

# Defending U.S. National Security

## *Developing innovative technological solutions to solve the toughest national security problems*



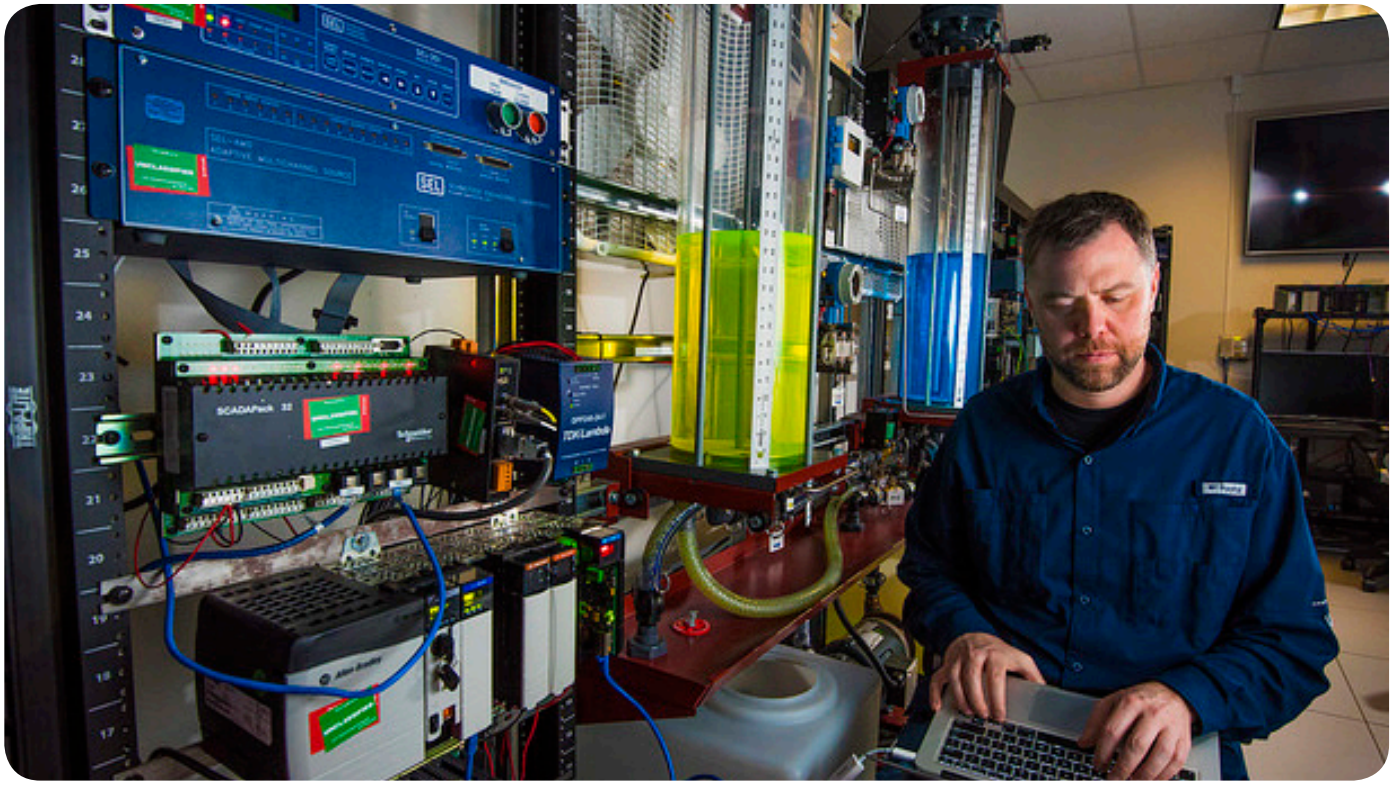
Sandia's National Security Programs provides advanced technology for the defenders of the nation. This is accomplished by applying the laboratories' engineering, science and technology expertise to the development of innovative systems, including path finder systems, sensors, and cyber technologies.

### Expanding U.S. Military Capabilities

Sandia engineering and technological innovations are directed toward advancing U.S. military capabilities. For example, Sandia conducted a highly successful first test flight in 2011 of the Advanced Hypersonic Weapon (AHW) for the U.S. Army Space and Missile Defense Command. The Department of Defense and the Navy are using a variant of AHW to develop and demonstrate technologies for Conventional Prompt Strike, which would allow the military to deliver a conventional weapon strike anywhere in the world within hours. The AHW and hundreds of rockets and missiles have been launched from Sandia's Kauai Test Facility, a tenant of the U.S. Navy Pacific Missile Range Facility established in 1962 to help the U.S. conduct atmospheric nuclear testing.

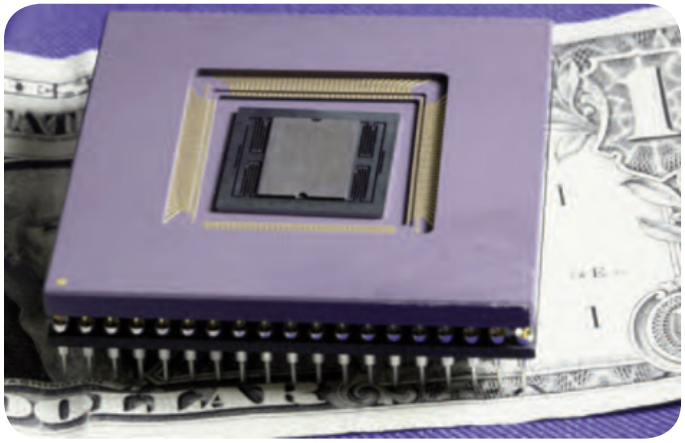
### Surveillance

Sandia is a world leader in the advancement of synthetic aperture radar (SAR), a type of radar able to produce high resolution, photo-like images of terrain and structures day or night and in good or bad weather. Recently, Sandia has made SAR lighter for unmanned aerial vehicles. When warfighters apply Sandia-developed coherent change detection algorithms to two images taken at different times, SAR detects changes to the environment that otherwise go unnoticed. This technology has been mounted on unmanned aerial vehicles to locate and help defeat improvised explosive devices.



## Cybersecurity

With the rise of technology, protecting the cyber realm has become an essential part of national security. The nation depends on an electronic information infrastructure for the essential functioning of our government, military and economic systems. Cybersecurity is a complex problem, because it involves a highly dynamic landscape with multiple players, both from the private sector and the national security military sector. Sandia is providing the innovation and expertise needed to pursue cybersecurity solutions for the future.



## Microelectromechanical Systems

Sandia conducts research, development and production of specialized integrated microsystems for national security applications. Through a Defense Advanced Research Projects Agency program, Sandia demonstrated a sensor that uses almost no power until it detects a specific sound or vibration.

U.S. DEPARTMENT OF ENERGY | NNSA National Nuclear Security Administration

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